



Multimodality

Transport planning
and execution

Developed by :



Agent-based SimulaTion for Resilience Of Intermodal Transportation (ASTROIT)



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European Union

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Project by :



Operational fields

Technologies

Solutions



AGENT-BASED SIMULATION FOR RESILIENCE OF INTERMODAL TRANSPORTATION (ASTROIT)

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Solution description

ASTROIT is a customizable simulation tool designed to model cargo transport as an agent-based system.

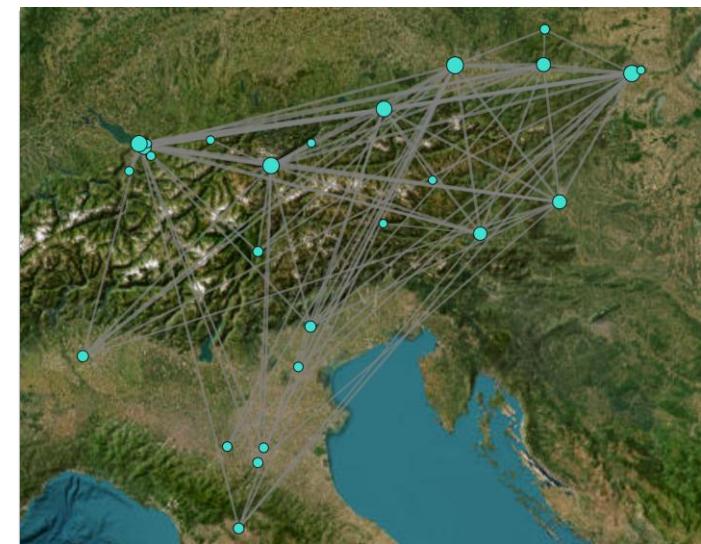
Each cargo unit (agent) autonomously selects the most optimal route from origin to destination based on user-defined cost minimization preferences (e.g., operational cost per km, CO₂ emissions per km, and travel time).



Benefits

- Vehicle Customization:** Vehicles differ by type, capacity, speed, CO₂ emissions, and operational costs. They operate on specific, scheduled routes suitable for their type.
- Dynamic Disruption Handling:** Network disruptions lower the performance of nodes/edges, increasing delays or causing total failure. Agents recalculate routes after a set reaction time.
- Congestion Management:** Overloaded nodes trigger the spawning of additional vehicles on connecting routes to relieve congestion. These auxiliary vehicles are removed once normal conditions resume.
- Full Customization:** Users can configure the network layout, vehicle characteristics, route schedules, and disruption scenarios at both node and edge levels.

Main beneficiary:
Carriers, LSPs, Infrastructure managers



Technology readiness level : **6**

Implementation stage :
Pilot

Operational fields

Technologies

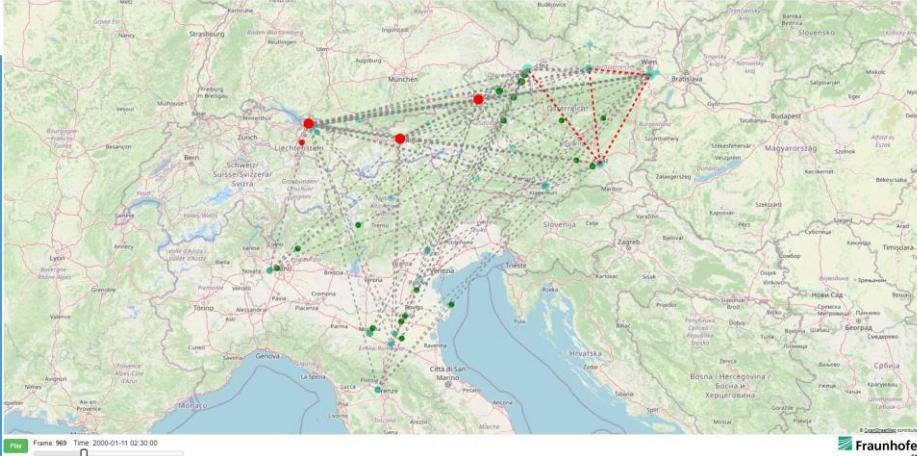
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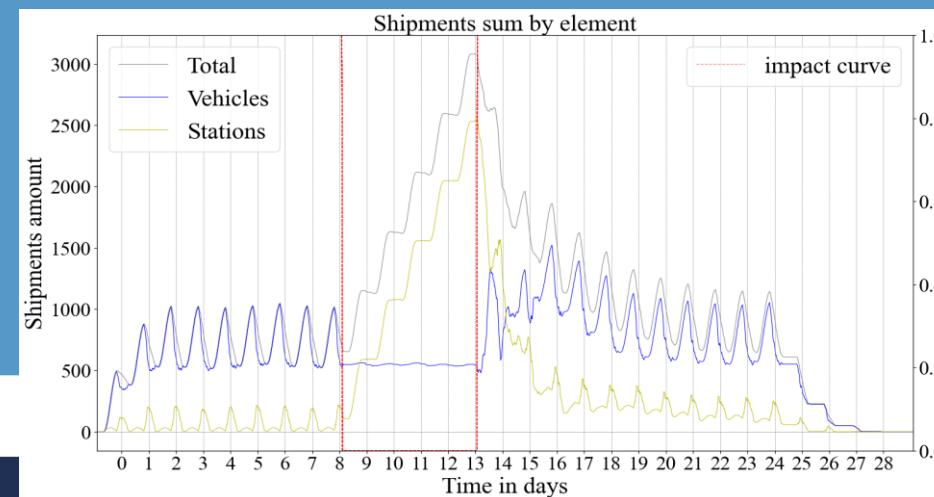
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Share your contact details and we'll get in touch with you!



Would you like to know more?
Take contact :



Dr. Corinna Köpke



Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut, EMI
Am Klingelberg 1. 79588 Efringen-Kirchen



Corinna.Koepke@emi.fraunhofer.de



<https://www.emi.fraunhofer.de/en.html>

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